breakout ABSTRACT

VISION to REALITY 2005

TITLE

Linking Childhood Lead Poisoning and Developmental Disabilities in Florida

THEME

Build a Sustainable National EPHT Network

KEYWORDS

data exchange, linkage, lead poisoning, developmental disabilities, GIS, geographic aggregation, FERPA

BACKGROUND

The Florida Childhood Lead Poisoning Prevention Program (CLPPP) has been collecting blood lead levels since 1993. To date, the Florida CLPPP has found 8,600 children in Florida with blood lead levels above 10 mcg/dL. The full prevalence of childhood lead poisoning in Florida is currently estimated to be 20,000–30,000 children below 72 months of age. According to historical NHANES data, these numbers were somewhat higher during the 1990's. At the same time, the University of Miami's Department of Psychology has been tracking developmental disabilities in Florida. This tracking process is accomplished in cooperation with the Florida Department of Education (DOE) and individual county school districts (one per county in Florida). The University of Miami has an agreement with the Florida DOE to analyze developmental disability data as classified in the public school system (which covers about 90% of the school-age children in Florida). The University uses this classification data to examine the prevalence of the following developmental disabilities in Florida's school age children: mental retardation, autism, emotional handicaps, and specific learning disabilities (among others). This EPHT presentation will focus on the process of linking childhood lead poisoning data with developmental disabilities data in order to perform traditional and GIS-based analyses.

OBJECTIVE(S)

1) Understand the process of linking databases from multiple agencies over multiple years. 2) Understand the importance of biomonitoring data in exposure assessment. 3) Understand the role of GIS in aggregating and analyzing data.

METHOD(S)

1) Use absolute and probabilistic linkage to connect live births with developmental disabilities. 2) Use absolute and probabilistic linkage to connect childhood lead poisoning with developmental disabilities. The linkage techniques use the child's first name, last name, date of birth, and the mother's name. 3) Analyze data to look for trends (demographic and geographic). 4) Use GIS to map relevant environmental hazards that could be associated with childhood lead poisoning (including U.S. EPA Toxic Release Inventory).

RESULT(S)

Research results are still pending, but may show that children with developmental disabilities are more likely to have been diagnosed with childhood lead poisoning at some time in the past. Presenting the results of this analysis has been a

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challenge due to FERPA and HIPAA privacy laws. The presentation will focus on some of the methods used to display results, given these challenges.

DISCUSSION/RECOMMENDATION(S)

Increased monitoring for childhood lead poisoning in Florida could lead to a reduced number of cases of developmental disabilities. Biomonitoring is critical to establish exposure and validate the link to related health outcomes.

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